

CAS/STN FILE 'WPIX, HCAPLUS' ENTERED AT 09:20:44 ON 14 APR 2005

L1 2 S US2002066961/PN  
 L2 SEL PLU=ON L1 1- IC RN : 6 TERMS  
 L3 76588 S L2  
 L4 2 S L1 AND L3  
 L5 SEL PLU=ON L4 1- PRN : 1 TERM  
 L6 2 S L5

FILE 'DPCI' ENTERED AT 09:21:37 ON 14 APR 2005

L7 1 S US20020066961/PN  
 L8 SEL PLU=ON L7 1- PN.D : 7 TERMS  
 L9 65 S L8  
 L10 SEL PLU=ON L9 1- PRN : 182 TERMS

FILE 'WPIX, JAPIO, HCAPLUS' ENTERED AT 09:22:33 ON 14 APR 2005

L11 327 S L10  
 L12 65 S L11 AND INSULAT#####(3A) (BASE OR PLATE OR SLAB OR FILM OR LAYER)  
 L13 17 S L12 AND BASE  
 L14 32 S L11 AND INSULAT#####(3A) SUBSTRATE  
 L15 0 S L11 AND SOI  
 L16 0 S L11 AND SIMOX  
 L17 84 S (L12 OR L13 OR L14) AND INSULAT#####  
 L18 16 S L11 AND COMPRESS#####  
 L19 133 S L11 AND (VOID##### OR HOLES OR ?PORE? OR  
 ?POROS? OR ?POROUS? OR FOAM##### OR TEXTIL##### OR CLOTH##### OR ?WOVEN? OR ?WEAVE?)  
 L20 45 S L11 AND MATRIX  
 L21 1 S L11 AND (?FIBROUS? OR MICROFIB?)  
 L22 48 S (L13 OR L14 OR L15 OR L16 OR L17) AND (L19  
 OR L20 OR L21)  
 L23 6 S L18 AND L22  
 L24 58 S L18 OR L22 OR L23  
 L25 59 S L21 OR L24  
 L26 46 S L25 AND (CONDUCTOR OR VIA OR ELECTRIC###(2A) (CONNECT##### OR INTERCONNECT#####))  
 L27 42 S L25 AND (?WIRE? OR ?WIRING? OR LEADS OR  
 VIAS OR TRACES OR ?LINES? OR CONDUCT#####(3A) ?PATTERN? OR RUNNER)  
 L28 37 S L26 AND L27  
 L29 41 S (L26 OR L27) AND (?POLYMER? OR ?RESIN? OR  
 MONOMER? OR ?PLASTIC? OR THERMOSET? OR ROBBER? OR ELASTOMER?  
 OR ?CURING? OR ?CURED? OR CURE OR ?CURAB?)  
 L30 1 S (L26 OR L27) AND (GTT OR TG OR GT OR T(1W)  
 G OR GLASS#####(2A) (TRANSITION### OR TEMPERATURE) OR SOFTEN##### OR BECOM###(W) SOFT#####)  
 L31 8 S L11 AND (GTT OR TG OR GT OR T(1W) G OR  
 GLASS#####(2A) (TRANSITION### OR TEMPERATURE) OR SOFTEN##### OR BECOM###(W) SOFT#####)  
 L32 25 S (L26 OR L27) AND (BONDING OR ADHE#####  
 OR GLU##### OR STRONG##### OR STRENGTH#####)  
 L33 38 S (L26 OR L27) AND (RESIN##### OR THERMOSET#  
 ##### OR EPOX##### OR ?CROSSLINK? OR ?CROSS?)  
 L34 15 S (L26 OR L27) AND (WHERE OR SITE OR  
 LOCATION OR POSITION OR POINT OR AREA OR REGION OR LOCUS OR POSITION##### OR LOCAT#####)  
 L35 0 S (L26 OR L27) AND SPOT  
 L36 23 S (L26 OR L27) AND RELIAB#####  
 L37 43 S (L26 OR L27) AND CONNECT#####  
 L38 4 S (L26 OR L27) AND INTERCONNECT#####  
 L39 38 S (L26 OR L27) AND WIRING  
 L40 1 S (L26 OR L27) AND ADJACEN#####  
 L41 2 S (L26 OR L27) AND COMPAR#####  
 L42 20 S (L26 OR L27) AND (COMPACT##### OR  
 COMPRESS##### OR COMPOSITE OR MATRIX)  
 L43 139 S (L13 OR L14 OR L15 OR L16 OR L17 OR L18)  
 OR (L20 OR L21 OR L22 OR L23 OR L24 OR L25 OR L26 OR L27 OR  
 L28 OR L29 OR L30 OR L31 OR L32 OR L33 OR L34 OR L35 OR L36 OR  
 L37 OR L38 OR L39 OR L40 OR L41)  
 L44 20 S L42 AND L43  
 L45 SEL PLU=ON L44 1- IC RN : 81 TERMS  
 L46 2344387 S L45  
 L47 20 S L44 AND L46  
 L48 32 S (L30 OR L31) OR L21 OR L23 OR L38 OR L40  
 OR L41 OR L47  
 L49 2 S US20020066961/PN  
 L50 SEL PLU=ON L49 1- IC ECLA NCL MC : 11 TERMS  
 L51 51 S (L12 OR L13 OR L14 OR L15 OR L16 OR L17 OR  
 L18) AND (L19 OR L20 OR L21 OR L22)  
 L52 168000 S L50  
 L53 44 S L52 AND L51  
 L54 61 S L48 OR L53  
 L55 61 S L54 NOT L49  
 L56 55 S L55 AND 2001-2005/PY, PRY  
 L57 49 S L55 AND 1990-2000/PY, PRY

L58 6 S L55 NOT L56  
 L59 49 S L57 OR L58  
 L60 44 S L59 AND (LESS##### OR INSULAT##### OR  
 SOFTEN##### OR TEMPERATURE OR BONDING)  
 L61 42 S L59 AND (INSULAT##### OR BASE)  
 L62 44 S L60 OR L61  
 L63 49 S L59 OR L62  
 L64 53 S L11 AND (PREPREG##### OR IMPREG#####)  
 L65 47 S (L12 OR L13 OR L14 OR L15 OR L16 OR L17 OR  
 L18 OR L19 OR L20 OR L21 OR L22 OR L23 OR L24 OR L25 OR L26 OR  
 L27 OR L28 OR L29 OR L30 OR L31 OR L32 OR L33 OR L34 OR L35 OR  
 L36 OR L37 OR L38 OR L39 OR L40 OR L41 OR L42 OR L43 OR L44)  
 AND L64  
 L66 6 S (L47 OR L48) AND L64  
 L67 26 S (L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR  
 L57 OR L58 OR L59 OR L60 OR L61 OR L62 OR L63) AND L64  
 L68 50 S (L65 OR L66 OR L67)  
 L69 53 S L64 OR L68  
 L70 42 S L69 NOT L55  
 L71 3 S L70 AND BASE  
 L72 7 S L70 AND INSULAT#####  
 L73 0 S L70 AND COMPRESS#####  
 L74 10 S L71 OR L72

FILE 'WPIX' ENTERED AT 10:41:44 ON 14 APR 2005

L75 1 S US20020066961/PN  
 L76 SEL PLU=ON L75 1- MC IC PLE : 48 TERMS  
 L77 798022 S L76  
 L78 144373 S L77 AND ?PRESS?  
 L79 19502 S L78 AND (STRONG##### OR STRENGTH#####)  
 L80 7173 S L78 AND (TG OR GT OR GTT OR TT OR SOFTEN###  
 #### OR TRANSITION#####(3A)(GLASS##### OR TEMPERATURE) OR  
 TEMPERATURE(2A)GLASS##### OR GLASSY)  
 L81 7357 S L78 AND (PREG##### OR PREPREG##### OR  
 IMPREG#####)  
 L82 1421 S L79 AND L80  
 L83 95 S L82 AND L81  
 L84 1724 S L80 AND (L79 OR L81)  
 L85 1495 S L79 AND L81  
 L86 119 S (L82 OR L83 OR L84 OR L85) AND INSULAT#####  
 ##(4A)(BASE OR SUBSTRATE OR BOARD OR PLATE OR SLAB OR FILM OR LAYER)  
 L87 210 S L83 OR L86  
 L88 95 S L87 AND (LESS##### OR LOWER OR LOWEST OR  
 WEAK#### OR STRONGER OR STRONGEST OR ENHANC##### OR RELIAB#####)  
 L89 5 S L87 AND INSULAT#####(W)BASE  
 L90 26 S L87 AND BONDING  
 L91 47 S L87 AND COMPRESS#####  
 L92 141 S L87 AND RESIN#####  
 L93 4 S L87 AND WIRING LAYERS  
 L94 27 S L87 AND WIRING  
 L95 53 S L87 AND LAYERS  
 L96 0 S L87 AND SUBLAYERS  
 L97 0 S L87 AND UNDERLAYER  
 L98 0 S L87 AND UNDERLAYER  
 L99 53 S L87 AND LAYERS  
 L100 0 S L87 AND SUBLAYERS  
 L101 0 S L87 AND INTERLAYERS  
 L102 9 S L87 AND INTERLAYER  
 L103 0 S L87 AND SUBLAYER  
 L104 56 S (L90 OR L91) AND (L92 OR L93 OR L94 OR L95  
 OR L96 OR L97 OR L98 OR L99 OR L100 OR L101 OR L102)  
 L105 69 S L89 OR L93 OR L102 OR L104  
 L106 46 S L105 AND 1990-2000/PRY,PY  
 L107 23 S L105 NOT L106

FILE 'REGISTRY' ENTERED AT 11:02:04 ON 14 APR 2005

L108 2983 S RESIN

FILE 'HCAPLUS' ENTERED AT 11:02:39 ON 14 APR 2005

L109 65428 S (PRESS##### OR COMPRESS#####) AND L108  
 E RESINS/CT  
 L110 170190 S ((RESINS/CT OR "PLASTIC MATERIALS AND  
 RESINOUS PRODUCTS"/CT OR RESINIFICATION/CT OR "RESINOUS  
 PRODUCTS"/CT) OR (ROSIN/CT OR "RESIN ACIDS"/CT OR "ABIETIC  
 ACID"/CT OR "DITERPENES AND DITERPENOIDS (L) RESIN ACIDS"/CT  
 OR "ESTER GUMS"/CT OR "ISOPIMARIC ACID"/CT OR "PIMARIC  
 ACID"/CT OR REFIKITE/CT) OR (RESINATES/CT OR "SODIUM RESINATE"/  
 CT OR "RESIN ACIDS AND ROSIN ACIDS"/CT OR "RESIN ACIDS OR

ROSIN ACIDS"/CT OR "RHODINIC ACID"/CT OR "ROSIN ACIDS"/CT OR  
 "TALL OIL ROSIN"/CT OR "RESIN ACIDS AND ROSIN ACIDS (L)  
 TALL-OIL"/CT OR "RESIN ACIDS AND ROSIN ACIDS (L) TALL-OIL,  
 ESTERS"/CT OR "TALL-OIL ROSIN (L) DIMERIZED"/CT OR "TALL-OIL  
 ROSIN (L) FUMARATED"/CT OR "TALL-OIL ROSIN"/CT OR SANDARAC/CT  
 OR "SCAMMONY RESIN"/CT OR SHELLAC/CT OR "COATING MATERIALS (L)  
 SHELLAC"/CT OR "SHELLAC SUBSTITUTES"/CT OR "WAXES AND WAXY  
 SUBSTANCES (L) SHELLAC"/CT OR "SHELLAC SUBSTITUTES"/CT OR  
 "SOLID PHASE SYNTHESIS SUPPORTS"/CT OR "STORAX (RESIN)"/CT OR  
 PITCH/CT OR PLASTICS/CT) OR RESIN##### OR MONOMER##### OR  
 EPOX##### OR ?AMIDE? OR ?IMIDE? OR ?URETHAN?) AND (PRESS#####  
 OR COMPRESS#####)

L111 44866 S (?CURE? OR ?CURING? OR ?CURAB? OR ?THERMOSET?) AND (PRESS##### OR COMPRESS#####)  
 L112 11494 S (L109 OR L110 OR L111) AND ((TEMPERATURE/CT OR "PHASE TRANSITION TEMPERATURE"/CT OR "GLASS  
 TRANSITION TEMPERATURE"/CT OR "GLASS TEMPERATURE"/CT OR "GLASS TEMPERATURE AND TRANSITION"/CT OR "GLASS TEMP."/CT  
 OR "GLASS TRANSITION TEMP."/CT OR "TRANSITION TEMP."/CT OR "TRANSITION TEMPERATURE"/CT OR "WILLIAMS-LANDEL-FERRY  
 EQUATION"/CT OR "GLASS TRANSITION"/CT OR PLASTICIZATION/CT) OR SOFTEN##### OR TG OT GT OR GTT OR T(1W)G OR GLASSY  
 OR GLASS TRANSITION OR TRANSITION TEMPERATURE)  
 L113 55066 S (L109 OR L110 OR L111) AND (("PHYSICAL PROPERTIES"/CT OR "MECHANICAL PROPERTIES"/CT OR  
 STRENGTH/CT OR "MECH. STRENGTH"/CT OR "MECHANICAL STRENGTH"/CT OR "BENDING STRENGTH"/CT OR "BREAKING STRENGTH"/CT  
 OR "HEAT OF RUPTURE OR HEAT OF BREAKING STRENGTH"/CT OR "BURSTING STRENGTH"/CT OR "COMPRESSIVE STRENGTH"/CT OR  
 "CRUSHING STRENGTH"/CT OR "FRACTURE TOUGHNESS"/CT OR "IMPACT STRENGTH"/CT OR "REBINDER EFFECT"/CT OR RIGIDITY/CT OR  
 RUPTURE/CT OR "SHEAR STRENGTH"/CT OR TEARING/CT OR "TEARING STRENGTH"/CT OR "TENSILE STRENGTH"/CT OR "TOUGHNESS (L)  
 FRACTURE"/CT OR "YIELD STRENGTH"/CT) OR STRENGTH##### OR STRONG#####)  
 L114 3725 S L112 AND L113  
 L115 72 S L114 AND (PRESS##### OR COMPRESS#####) AND INSULAT#####(3A) (BASE OR BOARD OR MATERIAL OR  
 SUPPORT#### OR SUBSTRATE OR SLAB OR PANEL OR PLATE OR LAYER OR FILM)  
 L116 11 S L115 AND (SEMICOND##### OR PC OR PCB OR CIRCUIT##### OR MICROCIRCUIT##### OR  
 NANOCIRCUIT#### OR WIRING OR TRANSISTOR OR MICROELECTRONIC)  
 L117 1212 S (L112 OR L113) AND (PRESS##### OR  
 COMPRESS#####) AND INSULAT#####(3A) (BASE OR BOARD OR MATERIAL OR SUPPORT#### OR SUBSTRATE OR  
 SLAB OR PANEL OR PLATE OR LAYER OR FILM)  
 L118 2517 S (L112 OR L113) AND (SEMICOND##### OR PC OR PCB OR CIRCUIT##### OR MICROCIRCUIT##### OR  
 NANOCIRCUIT#### OR WIRING OR TRANSISTOR OR MICROELECTRONIC)  
 L119 22 S (L117 OR L118) AND STRONGER  
 L120 4 S (L117 OR L118) AND STRONGEST  
 L121 4 S (L117 OR L118) AND WEAKER  
 L122 1 S (L117 OR L118) AND WEAKEST  
 L123 15 S (L117 OR L118) AND WEAK  
 L124 8 S (L117 OR L118) AND WEAKEN#####  
 L125 385 S (L117 OR L118) AND BONDING  
 L126 26 S (L117 OR L118) AND STRENGTHEN#####  
 L127 138 S (L117 OR L118) AND BONDING(8A) (CONNECT#####  
 # OR INTERCONNECT##### OR WIRE OR WIRING OR CIRCUIT##### OR IC)  
 L128 11 S (L119 OR L120 OR L121 OR L122 OR L123 OR L124) AND L125  
 L129 1 S (L119 OR L120 OR L121 OR L122 OR L123 OR L124) AND L126  
 L130 1 S (L119 OR L120 OR L121 OR L122 OR L123 OR L124) AND L127  
 L131 3 S L125 AND L126 AND L127  
 L132 72 S (L128 OR L129 OR L130 OR L131) OR (L119 OR L120 OR L121 OR L122 OR L123 OR L124) OR L126  
 L133 71 S L132 NOT L116  
 L134 10 S L133 AND BASE  
 L135 27 S L133 AND INSULAT#####  
 L136 22 S L133 AND COMPRESS#####  
 L137 40 S (L134 OR L135 OR L136)  
 L138 13 S L137 AND (COMPAR##### OR RELATIV#####)  
 L139 8 S L137 AND (MATRIX OR COMPOSITE OR ?WOVEN? OR CLOTH OR ?TEXTILE? OR PREG##### OR  
 PREPREG##### OR IMPREG#####)  
 L140 5 S L139 NOT L138

148997

## SEARCH REQUEST FORM Scientific and Technical Information Center - EIC2800

Rev. 3/15/2004 This is an experimental format -- Please give suggestions or comments to Jeff Harrison, JEF-4B68, 272-2511.

Date 3/25/05 Serial # D9/998,327 Priority Application Date 12/5/2000  
 Your Name M. Lewis Examiner # \_\_\_\_\_  
 AU 2822 Phone 202-4835 Room 5A30  
 In what format would you like your results? Paper is the default. PAPER DISK EMAIL

If submitting more than one search, please prioritize in order of need.

The EIC searcher normally will contact you before beginning a prior art search. If you would like to sit with a searcher for an interactive search, please notify one of the searchers.

Where have you searched so far on this case?

Circle: USPT DWPI EPO Abs JPO Abs IBM TDB

Other: \_\_\_\_\_

What relevant art have you found so far? Please attach pertinent citations or Information Disclosure Statements. \_\_\_\_\_

What types of references would you like? Please checkmark:

Primary Refs ☒ Nonpatent Literature \_\_\_\_\_ Other \_\_\_\_\_  
 Secondary Refs ☒ Foreign Patents \_\_\_\_\_  
 Teaching Refs \_\_\_\_\_

What is the topic, such as the novelty, motivation, utility, or other specific facets defining the desired focus of this search? Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.

Claims 1, 3-6, 9, 13-15

Problem: See pages 1-2  
 Solution: 11 3-6

Please also focus on the  
 compounds used (see pages 9, 10  
 & 16)

CIRCUIT SUBSTRATE

## Staff Use Only

Searcher: HarrisonSearcher Phone: 22511

Searcher Location: STIC-EIC2800, JEF-4B68

Date Searcher Picked Up: 4-14-05Date Completed: 4-14-05Searcher Prep/Rev Time: 82Online Time: 74

## Type of Search

Structure (#) \_\_\_\_\_

Bibliographic ☒

Litigation \_\_\_\_\_

Fulltext \_\_\_\_\_

Patent Family \_\_\_\_\_

Other \_\_\_\_\_

## Vendors

STN ☒

Dialog \_\_\_\_\_

Questel/Orbit \_\_\_\_\_

Lexis-Nexis \_\_\_\_\_

WWW/Internet \_\_\_\_\_

Other \_\_\_\_\_